ADDENDUM 04 TO CONTRACT DOCUMENTS

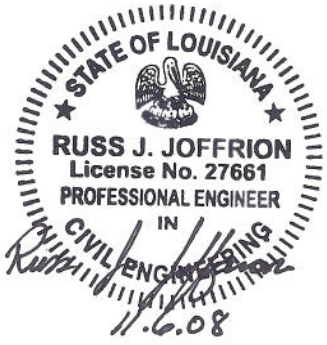
FOR

MISSISSIPPI RIVER SEDIMENT DELIVERY SYSTEM – BAYOU DUPONT (BA-39)

FILE NUMBER: P27204UL

SOLICITATION NUMBER: 2228428

JEFFERSON & PLAQUEMINES PARISHES, LOUISIANA



NOVEMBER 6, 2008

LOUISIANA DEPARTMENT OF NATURAL RESOURCES

COASTAL ENGINEERING DIVISION
ADDENDUM 04 TO BID DOCUMENTS

MISSISSIPPI RIVER SEDIMENT DELIVERY SYSTEM – BAYOU DUPONT
(BA-39)
FILE NUMBER: P27204UL
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The clarifications and responses to Contractor questions and revisions to the Plans and Specifications provided in this addendum supersede the requirements of the Plans and Specifications dated August 2008. A replacement Plan sheet is provided in **Attachment A**.

1. General Clarifications on Plans and Specifications:

1.1 As per **TS-1.1**, all construction equipment must be located within the construction limits shown on the Plans. The construction limits of the proposed dredge slurry pipeline corridor shall be no greater than 100' in width.

As per **TS-1.2**, "The slurry pipeline used for marsh creation shall be placed within the proposed dredge slurry pipeline corridor and within the construction limits shown on the plans. The Contractor's proposed equipment access route and slurry pipeline location shall be submitted in the Work Plan for approval prior to mobilization."

The second sentence in the third paragraph of **TS-1.2** shall be amended to state:

Existing drainage shall not be impeded due to the placement of the slurry pipeline or any construction equipment. This includes the canal south of West Ravenna Road and the flood protection levee canal.

1.2 The following sentences shall be added to **SP-11 Landowner and Pipeline Requirements**:

The Contractor shall add the landowners as an additional insured. It is also agreed and understood that the Contractor will at all times indemnify and hold harmless all landowners from and against any and all claims, demands, causes of action, judgments, liabilities, and expense of every nature, including attorney's fees, by reason of personal injury, death (including but not limited to injuries to and death of employees of the landowners and the Contractor's employees) or damage to property, (including environmental) which arises out of, results from, or is in any manner related to, directly or indirectly, any operations or acts hereunder, or to the exercise of your rights hereunder, or to your presence upon or use of the landowners' premises above referred to, or to the use or existence of your facilities on such premises. The indemnity provisions of this paragraph shall not apply if any such injury, death, damage, liability claim, or cause of action is caused by the negligence of the landowners, their employees, agents, or representatives.

1.3 Section **TS-3** shall be amended to state:

TS-3 SURVEYS

3.1 Scope

The Contractor shall furnish all of the materials, labor, and equipment necessary to perform Pre-Construction, Process, and As-Built Surveys at the locations shown in the plans and as outlined in these Specifications. **Pre-Construction surveys** are those required to be conducted prior to the commencement of Work. A pre-construction survey shall be performed to serve as a baseline for fill quantities. **Process surveys** are conducted during construction for quality control, partial payment, and acceptance. **As-built surveys** are post construction surveys to be performed after the completion of all Work. Accepted process surveys may be used as As-Built Surveys and shall be approved by the Engineer.

Secondary monuments BA03C-SM-01 and BA03C-SM-02 are part of LDNR's Secondary GPS Network and shall be used for horizontal and vertical control. Data sheets for both secondary monuments are included in Appendix E. All surveys shall be performed by personnel who are approved by the Engineer and under the direct supervision of a professional land surveyor licensed in the state of Louisiana. All survey drawings shall be signed and sealed by the surveyor. Survey data shall reference the North American Datum of 1983 (NAD 83), Louisiana South Zone, U.S. Survey Foot for horizontal control, and the North American Vertical Datum of 1988 (NAVD 88), U.S. Survey Foot for vertical control.

The survey baseline and transects 1-12, perpendicular to the baseline as shown in the Plans, were established during engineering and design. Transects 27-37 shall be parallel to the baseline, as shown in the Plans. All marsh fill area surveys shall use the same transect coordinates. Design survey information shall be provided at the Pre-construction Conference.

3.2 Accuracy and Methodology

All surveys shall be conducted using the 5 cm accuracy standard. The Contractor shall use Digital Leveling Instruments, Real Time Kinematic (RTK) and Global Positioning System (GPS) receivers, and software necessary to achieve the required survey accuracy. A six inch (6") metal plate shall be attached to the bottom of the survey rod to prevent the rod from sinking past the bottom.

3.3 Pre-Construction Survey

The baseline and transects shown on the plans shall be surveyed and staked by the Contractor after the Pre-Construction Conference and prior to construction. This survey shall be used to verify the alignment of the various project features, determine fill volumes, quantities, and make modifications or adjustments as deemed necessary by the Engineer. Drawings of the plan views, cross sections, and calculations of projected quantities of materials shall be developed from this survey by the Contractor and submitted to the Engineer for review. All bathymetric surveys must be corrected for tidal fluctuations and wave action to the referenced datum.

3.3.1 Temporary Bench Marks (TBMs)

The Contractor shall also install additional TBMs as necessary to perform the survey. Horizontal and vertical coordinates shall be determined for all TBMs installed. The Contractor shall maintain the TBMs for the duration of the Work. In the event that a single TBM is disturbed and/or destroyed, the TBM may be reinstalled by approved personnel at the expense of the Contractor. If multiple TBMs are destroyed, the Engineer may require the TBMs to be reinstalled by a Professional Surveyor licensed in State of Louisiana.

3.3.2 Baseline

The baseline shall be surveyed and staked at all points of inflection and transect intersections as shown on the Plans. The baseline shall be shown on the plan view drawings.

3.3.3 Containment Dikes

The alignment of all containment dikes and enhanced spoil banks within the fill areas shall be surveyed and staked at a minimum of 500 ft intervals along the entire length of proposed containment dikes. The elevation and coordinates at each stake shall be recorded.

3.3.4 Marsh Creation Areas

Elevations shall be surveyed and recorded at points every fifty feet (50') along each transect line, and shall extend two hundred feet (200') beyond the toe of the marsh fill containment dike alignment, and twenty-five feet (25') beyond the flood protection levee and marsh fill interface. The transects for the marsh creation areas shall be surveyed and staked at five hundred foot (500') intervals in grid format as shown in the Plans. In marsh fill areas deemed **inaccessible** by the Engineer, grade stakes will be used to compute marsh fill volumes (see TS-4). The existing ground elevation coordinates and identification number for each grade stake shall be recorded.

The Contractor shall develop drawings which show the cross sections and plan views. Elevations, coordinates, lines, and grades for the fill areas shall be shown on the drawings. The Contractor shall also determine the projected quantities of marsh fill material and containment. The projected marsh fill quantities shall be calculated using a method that is approved by the Engineer, such as the average end area method or AutoCAD. The projected quantities of marsh fill material shall be calculated in cubic yards, and the containment dike quantities shall be calculated per linear foot.

3.3.5 Borrow Area

The borrow area pre-construction survey transects shall be spaced five hundred feet (500') apart, perpendicular to the borrow area center line, and extend five hundred feet (500') past the limit of the cut unless otherwise shown on the Plans. The pre-construction borrow area survey must be submitted to and approved by the Engineer prior to beginning excavation or dredging.

3.3.6 Settlement Plates

The elevation of the top of each settlement plate shall be recorded and reported to the nearest tenth of a foot (0.1') NAVD 88 upon installation.

3.3.7 Magnetometer Survey

A magnetometer survey has been performed in preparation for this project in an effort to verify locations and depths of pipelines and other underwater obstructions in the borrow area and marsh creation areas. See Appendix F for all borrow area magnetometer survey information.

A magnetometer survey shall be performed in the borrow area and the marsh creation areas prior to excavation and dredging to verify pipeline locations and depths and other underwater obstructions. Magnetometer track lines shall be run along the centerline alignment of the proposed containment dike and enhanced spoil bank borrow pit locations. Additional magnetometer lines shall be run perpendicular to the containment dike and enhanced spoil bank locations. These track lines shall begin at the outer edge of the containment dike or enhanced spoil bank and extend twenty-five feet (25') past the containment dike or enhanced spoil bank borrow pit and shall be spaced a maximum of two hundred fifty feet (250') apart.

Magnetometer track lines in the Mississippi River borrow area shall form a grid pattern with a maximum offset of five hundred feet (500') apart, and shall be oriented north/south and east/west. A magnetometer survey must be performed at all locations along the dredge slurry pipeline corridor where excavation will take place to accommodate the dredge slurry pipeline. Magnetometer surveys shall be provided to the Engineer prior to excavation and dredging. This does not relieve the Contractor of responsibilities set forth in GP-25 Utilities.

3.3.8 Pipeline Locations

All pipelines located within one hundred fifty feet (150') of the containment dike alignments, marsh fill areas, borrow area, and dredge slurry pipeline corridor shall be probed for depth and their locations marked prior to excavation, dredging, and installation of the dredge slurry pipeline, for the duration of construction activities. A buffer distance of fifty feet (50') for the 20" Shell oil pipeline in Marsh Creation Area 2 shall also be staked prior to excavation. No hydraulic dredging may take place within five hundred feet (500') of any existing pipeline in the Mississippi River.

3.4 Process Survey

The baseline and transects used for the Pre-Construction survey and shown on the plans shall be used for the process survey. This survey shall be used for payment of the marsh fill volumes, payment of the containment dikes, and to make modifications or adjustments as deemed necessary by the Engineer. Drawings of the plan views and cross sections and calculations of quantities of materials shall be developed from this survey by the Contractor and submitted to the Engineer for review and payment. The volume of each cell shall be calculated using the average end area method in both directions. The two volumes shall be averaged to yield the volume of the cell. The quantities of marsh fill material shall be calculated in cubic yards, and the containment dike quantities shall be calculated per linear foot. All bathymetric surveys must be corrected for tidal fluctuations and wave action to the referenced datum.

3.4.1 Containment Dikes

After the containment dikes have been constructed, the toes and top centerline of the containment dikes shall be surveyed a minimum of every five hundred feet (500'). The elevation and coordinates shall be recorded and used to create plan views and cross sections of the containment dikes to ensure that the dikes have been constructed to the dimensions shown on the plans and as per TS 5.5.

3.4.2 Marsh Creation Areas

Transects shall be surveyed every fifty feet (50') along each line and twenty-five feet (25') beyond the flood protection levee and marsh fill interface. Marsh creation areas shall be surveyed monthly, or as directed by the Engineer, at all survey transects shown on the Plans as well as all points of inflection. The Engineer shall evaluate the process surveys to determine if the fill lift is to be accepted or modified as per TS-6.11. The Contractor shall perform additional survey transects in marsh fill areas as deemed necessary by the Engineer. Those portions of dredge fill which are modified must also be resurveyed.

In marsh fill areas deemed **inaccessible** by the Engineer for the use of conventional survey methods, grade stakes will be used to compute marsh fill volumes as per TS-4. The top of fill elevation coordinates and identification number shall be recorded at each grade stake and used to create plan views and cross sections. These plan views and cross sections shall be used for the calculation of the marsh fill volume. The marsh fill quantities shall be calculated using a method that is approved by the Engineer, such as the average end area method or AutoCAD.

3.4.3 Borrow Area

The location of the dredge cutter head shall be known at all times during dredging operations as per TS-6.

3.4.4 Settlement Plates

The elevation of the top of each settlement plate shall be recorded and reported to the nearest tenth of a foot (0.1') NAVD 88 weekly during marsh fill placement. This information shall be provided to the Engineer weekly.

3.5 As-Built Surveys

The marsh creation areas, containment dikes, borrow area, highway and railroad crossings, and settlement plates shall be surveyed by the Contractor after construction is complete. Final payment will not be received until the As-Built Survey and Work have been accepted by the Engineer. All bathymetric surveys must be corrected for tidal fluctuations and wave action to the referenced datum.

3.5.1 Containment Dikes

The As-Built Survey shall incorporate the cross sections and plan views from the process surveys for all containment dikes.

3.5.2 Marsh Creation Areas

The As-Built Survey shall incorporate the approved and accepted process surveys for all of the marsh fill areas. The Contractor shall develop drawings which include the cross sections, plan views, elevations, quantities, and volumes from the process surveys. The dates, elevations, and volumes for each process survey shall be superimposed onto the corresponding fill cells on the plan views. The As-Built quantities of marsh fill material shall be calculated in cubic yards, and the containment dike quantities shall be calculated per linear foot.

3.5.3 Borrow Area

Borrow area As-Built Survey transects shall be spaced five hundred feet (500') apart, perpendicular to the borrow area center line, and extend five hundred feet (500') past the limit of the cut unless otherwise shown on the Plans.

3.5.4 Highway and Railroad Crossings

Highway and railroad crossings shall be surveyed as part of the As-Built survey for payment of the jacked casing pipe. The invert elevation of both ends of the casing pipe and linear footage of casing pipe shall be surveyed and included in the As-Built survey.

3.5.5 Settlement Plates

The As-Built Survey shall incorporate the data from the process surveys for all settlement plates. The final settlement plate elevation shall be listed on the As-Built drawings.

3.6 Deliverables

The pre-construction, process, and As-Built Surveys shall be stamped by a professional surveyor licensed in the state of Louisiana. The Contractor shall provide the details for the survey layout and marsh fill grade stake layout in the Work Plan.

The pre-construction survey drawings and projected material quantities shall be submitted to the Engineer for review prior to excavation. Three copies shall be provided on 11"x17" paper and one digital copy provided in AutoCAD.

The process survey drawings, in-place material quantities, and supporting calculations shall be submitted to the Engineer for review immediately after they are completed in order to receive acceptance and payment. Three copies shall be provided on 11"x17" paper and one digital copy provided in AutoCAD.

The As-Built Survey and in-place material quantities shall be submitted to the Engineer by the date provided in SP-3 in order to receive acceptance and final payment. Three copies shall be provided on 11"x17" paper and two digital copies provided in AutoCAD. The survey shall incorporate all field changes, change orders, and quantities of materials placed. All revisions shall be shown in red and be easily distinguishable from the original design.

Point files of the pre-construction, process, and As-Built Surveys shall be included in the digital copies, organized by transect, and shall contain the following information:

3.6.1 Point number;

3.6.2 Northing (NAD 83 U.S. ft.);

3.6.3 Easting (NAD 83 U.S. ft.);

3.6.4 Elevation of the top of soil (NAVD 88 ft.);

3.6.5 Elevation of the water level (if applicable) (NAVD 88 ft.);

3.6.6 Description.

3.7 Measurement and Payment

Payment for Surveys shall be made at contract lump sum price for Bid Item No. 2, "Surveys". Price and payment shall constitute full compensation for furnishing all labor, materials, and equipment to perform the pre-construction, process, and As-Built Surveys specified herein.

1.4 Section **TS-6.11** shall be amended to state:

6.11 Acceptance

The marsh creation area will be considered for acceptance when the marsh platform has reached and maintained an elevation between +1.7' and +2.3' NAVD 88 for a period of 28 days after hydraulic dredging is terminated in the area being considered for payment. Acceptance will be based on the surveyed marsh fill elevation as per TS-3 Surveys, estimated to the nearest +0.1'. If marsh fill areas are deemed **inaccessible,** as determined by the Engineer, the Contractor shall determine marsh fill elevations from visual inspections of the marsh fill grade stakes under direct supervision of the Inspector. The average volume contained in each cell shall then be calculated if the process survey elevations are accepted by the Engineer. The volume of each cell shall be calculated using the average end area method as per TS 3.4, or other method approved by the Engineer. Volume calculations shall be submitted to the Engineer for verification.

All measurements will be taken by the Contractor and witnessed by the Engineer or Inspector prior to acceptance. If the average elevation of the inspected cell after 28 days is below **the elevation of +1.7' NAVD 88**, the Engineer will require the Contractor to place additional material prior to final acceptance, thus requiring an additional 28 day acceptance period. If the average elevation of the inspected cell is greater than **the elevation of +2.3' NAVD 88**, the Engineer will require material to be removed at the expense of the Contractor. Should funding or dredged material properties prevent the entire fill area to reach the target elevation, the Engineer reserves the right to require portions of the project area to be at or near target elevation through use of training dikes or other such methods, in order to maximize the amount of emergent marsh created. The Contractor will be made aware of such instances in writing by the Engineer during construction.

1.5 Section **TS-6.12** shall be amended to state:

6.12 Measurement and Payment

Payment for marsh creation will be made at the contract unit price per cubic yard of fill placed in the marsh fill areas shown on the Plans for Bid Item No. 5, "Marsh Creation Fill". **Payment will be made per cubic yard up to the maximum elevation of +2.3' NAVD 88**. There will be no payment for placing quantities in excess of the lines, grades, and elevations shown on the plans and stated in these specifications. Price and payment shall constitute full compensation for furnishing all plant, labor, materials, and equipment for dredging, satisfactory placement of dredged material into designated areas, all operations necessary for containment and dewatering of spoil material, and performing all Work as specified herein.

The Contractor may request partial payments. The volume included in the partial payment will be determined by the survey cross sections for the fill area or the marsh fill elevations from visual inspection of the grade stakes that are submitted by the Contractor and approved by the Engineer. All surveys and visual inspections shall be performed when the Engineer or Inspector is present. The Contractor shall submit copies of all field survey data to the Engineer prior to payment for processing purposes.

2. Clarifications on Question from the Mandatory Pre-Bid Conference:

As stated in General Note 2 on Plan Sheet 2, borrow area elevations shown on the Plans are based on surveys performed in 2003 by the U.S. Army Corps of Engineers. The engineer evaluated surveys performed in 1992, 2003, 2006, and 2007 and concluded that there was no significant change.

3. Questions Submitted by Great Lakes Dredge & Dock Company, LLC and Clarifications from the Engineer:

3.1 Question: Can the Louisiana Department of Natural Resources please provide copies of the permits related to the referenced solicitation?

Response: All permits were reviewed by the Engineer prior to finalizing the Bid Documents. All work described in the Plans and Specifications is in conformity with the permits mentioned in **GP-26**. A copy of all permits will be provided to the successful bidder at the Pre-Construction Meeting.

3.2 Question: Section 6.12 Measurement and Payment on page 63 of 66, indicates that the 'Maximum Elevation' for the Marsh Creation Area is +2.3' NAVD88 and that there will be No Payment for placing quantities in excess of the lines, grades and elevations shown on the Plans and stated in these Specifications. The Engineer may require material placed above the elevation tolerance to be removed at the expense of the Contractor.

Does the Louisiana Department of Natural Resources intend to make Contractors remove material if placed above the 'Maximum Elevation' of +2.3' NAVD88 or can the placement of that material remain in place and simply be deducted from the total Marsh Creation Area fill volume?

Answer: See 1.3 above.

3.3 Question: Although the contract allows for a target elevation and a tolerance of ±0.3' Section TS 6-11 states if an inspected section contains 100' of continuous material below the target elevation of 2.0' NAVD88, the Engineer will require the contractor to place additional material prior to final acceptance. This in effect requires the contractor to place the material between 2.0' and 2.3' NAVD88 which is basically a 0.3' tolerance.

Such a tight tolerance is extremely difficult and exponentially more expensive to meet. Recent projects such Barataria Landbridge (±0.3') and Pass Chaland (±0.5') had total tolerance of 0.6' and 1.0' respectively. This is two to three times the effective tolerance that is allowed for this project.

It may be difficult for Contractors to accurately calculate the marsh Creation Area fill elevation needed to maintain the 'Target Elevation' of +2.0' NAVD88 without knowing how much the hydraulically dredged and placed material is going to settle in the specified 28 day acceptance period requirement.

We therefore request, at a minimum, the tolerance be to target depth of 2.0' ±0.3' NAVD88 with no requirement for placing additional material if the inspections show the material is placed above the minimum elevation of 1.7' NAVD88.

Response: See 1.4 above.

3.4 Question: Section 3.4.2 Marsh Creation Areas on page 51 of 66, indicates that "In marsh fill areas deemed inaccessible by the Engineer through the use of conventional survey methods, grade stakes will be used to compute marsh fill volumes as per TS-4." It is Great Lakes belief that, for as-built surveys, the potential for the need to utilize both conventional survey methods and grade stakes, because of inaccessibility, will result in inconsistent survey results. With the tight tolerance this may make it impossible to achieve an accurate fill within tolerance. GLDD request the specification reflect that the as-built surveys will be taken exclusively on the grade stakes.

Response: See 1.3 above.

3.5 Question: Section 6.5 Borrow Area Cut Sequence and USACE Restrictions on page 61 of 66 indicates that "Dredge pipe installation, hydraulic dredging, removal of the dredge pipe, and work over the levee is limited to when the stage of the Mississippi River is below elevation +11.0' NGVD 1929 on the Carrollton Gage, at New Orleans, Louisiana as per the Department of the Army Permit." Will a time extension be granted, for an equivalent amount of time, should the river stage remain above 11.0' NGVD 1929 for an unusually extended period of time? If the river stage is above 11.0 NGVD 1929 can pipeline work be done as long as it is landward of the Mississippi River Levee?

Response: The contract time has been extended from 270 days to 300 days. Time extensions shall adhere to **GP-44**. Work may be done anywhere landward of the Mississippi River levee during river stages above +11.0' NGVD 1929 at the Carrollton Gage.

3.6 Question: Please provide sieves/gradation curves for the borings provided in the specification, especially B-1B, B-2B, & B-3B.

Response: Grain size distribution test results obtained from borings B-1B, B-2B, and B-3B are included in **Attachment B**.

3.7 Question: Because the material to be dredged is sand and the marsh creation is better than 5 miles away, it is likely a booster pump will be needed to pump the material from the borrow area to the marsh creation site. Is a booster allowed to be placed on land? Is there an alternate pipeline route to allow for a floating booster to be placed further from the borrow site and closer to the marsh creation site?

Response: See 1.1 above.

3.8 Question: We request that an industry standard Differing Site condition clause be added to the specifications.

Response: No Differing Site condition clause will be added to the specifications for this project.

3.9 Question: GP-56, a one year guarantee should not apply to this type of work and should be removed from the contract. The contractor should not be responsible for the marsh creation after final acceptance.

Answer: No change will be made to **GP-56**.

3.10 Question: SP-4.3.4, The contractor has no way to estimate what the extent of the delay will be for encountering such prehistoric, historical, archeological or cultural items and therefore should be entitled to both time and compensation for any delays attributed to discovery of historical or cultural sites.

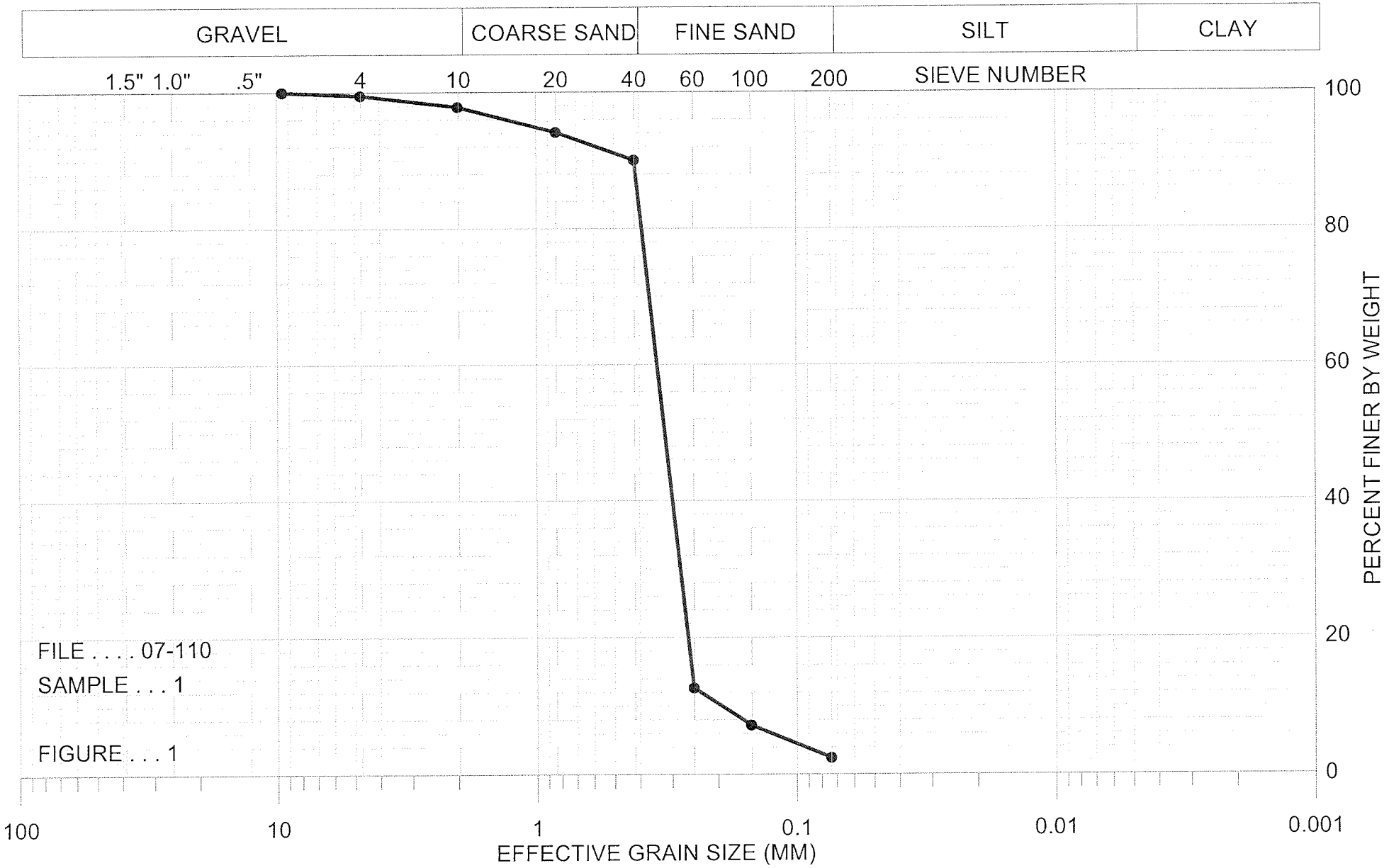
Answer: Both the marsh fill areas and the borrow area have been cleared by the Louisiana State Historic Preservation Office. A geophysical survey was performed in the borrow area in August of 2007 which identified no anomalies.

3.11 Question: TS-3.4.2, Process Surveys, Marsh Creation Area – the process should be completed on a monthly basis for progress payment. Bi-weekly surveys are too often and we ask that this requirement be removed.

Answer: See 1.3 above.

ATTACHMENT B

GRAIN SIZE CURVE



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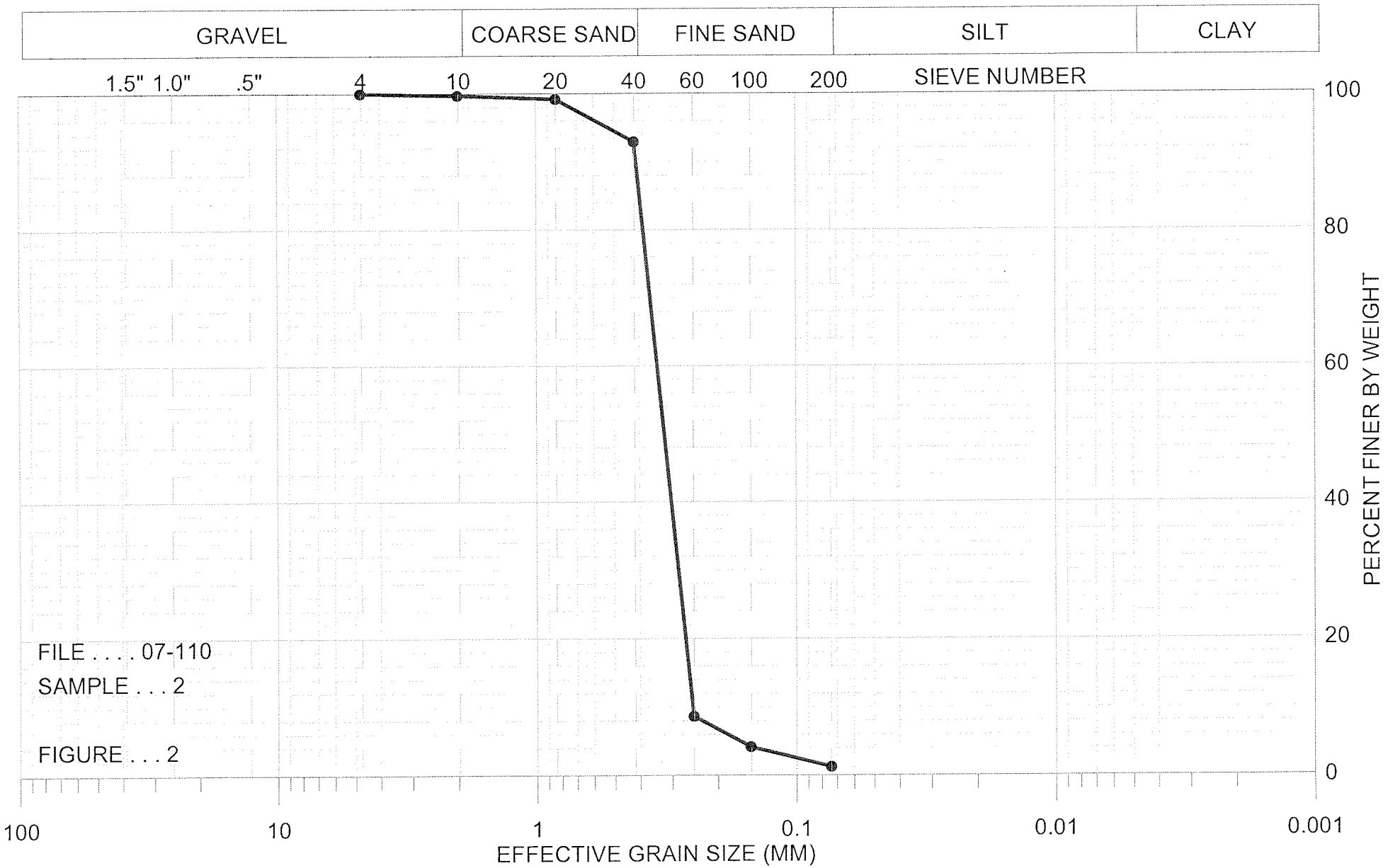
GRAIN SIZE CURVE



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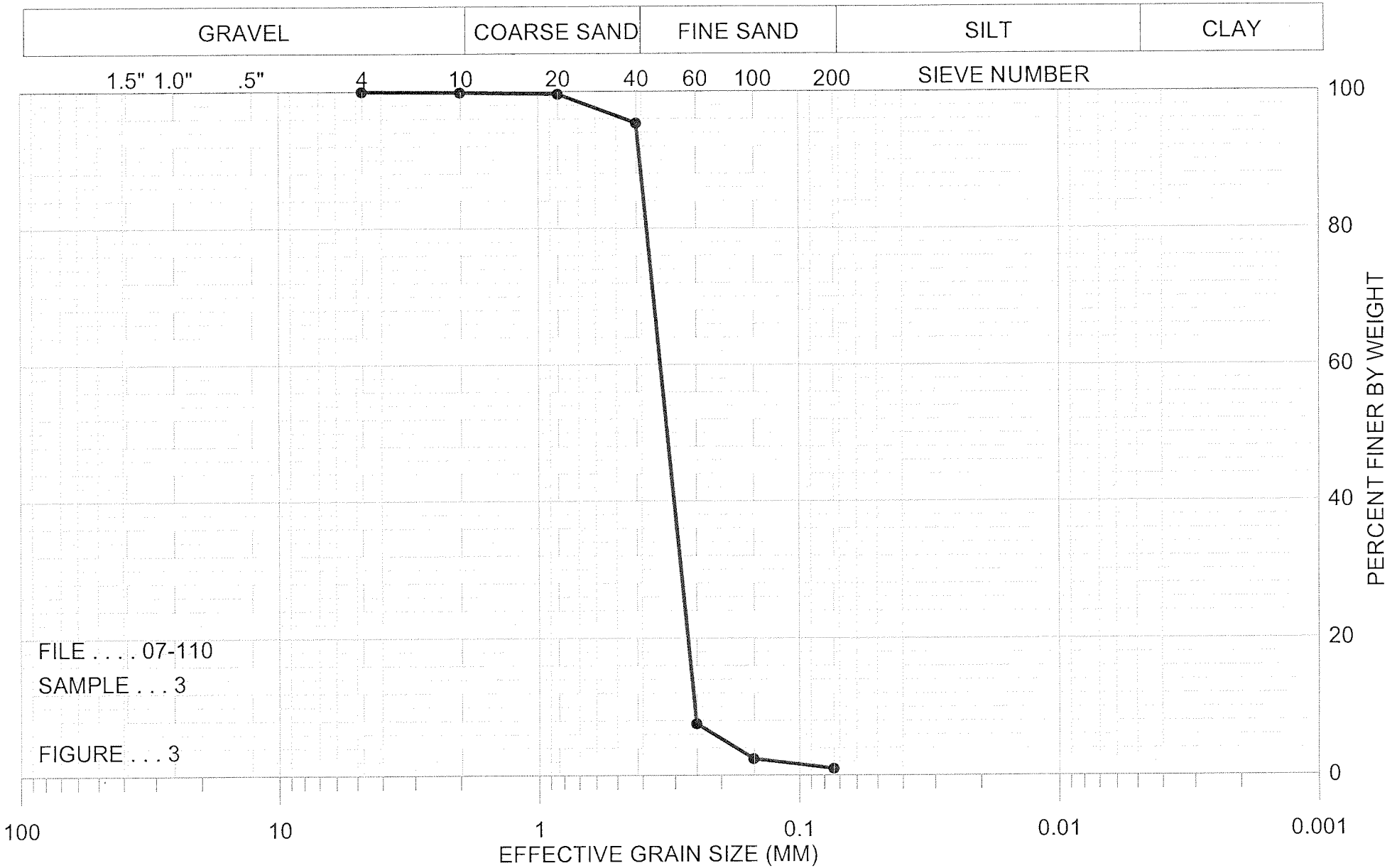
GRAIN SIZE CURVE



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